



# HSE18-P3B1BA

H18 Sure Sense

HYBRID PHOTOELECTRIC SENSORS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
HSE18-P3B1BA	1078791

Other models and accessories → [www.sick.com/H18\\_Sure\\_Sense](http://www.sick.com/H18_Sure_Sense)

### Detailed technical data

#### Features

<b>Functional principle</b>	Through-beam photoelectric sensor				
<b>Dimensions (W x H x D)</b>	16.2 mm x 45.5 mm x 31.8 mm				
<b>Housing design (light emission)</b>	Hybrid				
<b>Thread diameter (housing)</b>	M18				
<b>Mounting system type</b>	M18, head/side (24.1 ... 25.4 mm)				
<b>Housing color</b>	Blue				
<b>Sensing range max.</b>	0 m ... 20 m				
<b>Sensing range</b>	0 m ... 15 m				
<b>Type of light</b>	Infrared light				
<b>Light source</b>	LED <sup>1)</sup>				
<b>Light spot size (distance)</b>	1,400 mm (10 m)				
<b>Wave length</b>	850 nm				
<b>Adjustment</b>	<table border="0"> <tr> <td>Potentiometer, right</td> <td>None</td> </tr> <tr> <td>Potentiometer, left</td> <td>None</td> </tr> </table>	Potentiometer, right	None	Potentiometer, left	None
Potentiometer, right	None				
Potentiometer, left	None				
<b>Special features</b>	Signal strength light bar				

<sup>1)</sup> Average service life: 100,000 h at T<sub>U</sub> = +25 °C.

#### Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC
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- <sup>1)</sup> May not exceed or fall below U<sub>V</sub> tolerances.
- <sup>2)</sup> Without signal strength light bar and load.
- <sup>3)</sup> Signal transit time with resistive load.
- <sup>4)</sup> With light/dark ratio 1:1.
- <sup>5)</sup> A = V<sub>S</sub> connections reverse-polarity protected.
- <sup>6)</sup> B = inputs and output reverse-polarity protected.
- <sup>7)</sup> D = outputs overcurrent and short-circuit protected.

<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>1)</sup>
<b>Current consumption</b>	≤ 20 mA <sup>2)</sup>
<b>Switching output</b>	PNP
<b>Output function</b>	Complementary
<b>Switching mode</b>	Light/dark switching
<b>Switching output detail</b>	
Switching output Q1	PNP, Light switching
Switching output Q2	PNP, Dark switching
<b>Output current I<sub>max.</sub></b>	≤ 100 mA
<b>Response time</b>	≤ 0.5 ms <sup>3)</sup>
<b>Switching frequency</b>	1,000 Hz <sup>4)</sup>
<b>Connection type</b>	Cable with M8 male connector, 4-pin, 150 mm
<b>Cable material</b>	PVC
<b>Conductor cross section</b>	0.2 mm <sup>2</sup>
<b>Circuit protection</b>	A <sup>5)</sup> B <sup>6)</sup> D <sup>7)</sup>
<b>Protection class</b>	III
<b>Weight</b>	18 g
<b>Housing material</b>	Plastic, VISTAL®
<b>Optics material</b>	Plastic, PMMA
<b>Enclosure rating</b>	IP67 IP69K
<b>Items supplied</b>	Fastening nut (1x), M18, plastic, black, flat
<b>Electromagnetic compatibility (EMC)</b>	EN 60947-5-2 (The sensor complies with the Radio Safety Requirements (EMC) for the industrial sector (Radio Safety Class A). It may cause radio interference if used in a residential area.)
<b>Ambient operating temperature</b>	-40 °C ... +70 °C
<b>Ambient temperature, storage</b>	-40 °C ... +75 °C
<b>UL File No.</b>	E189383

<sup>1)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>2)</sup> Without signal strength light bar and load.

<sup>3)</sup> Signal transit time with resistive load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> A = V<sub>S</sub> connections reverse-polarity protected.

<sup>6)</sup> B = inputs and output reverse-polarity protected.

<sup>7)</sup> D = outputs overcurrent and short-circuit protected.

### Classifications

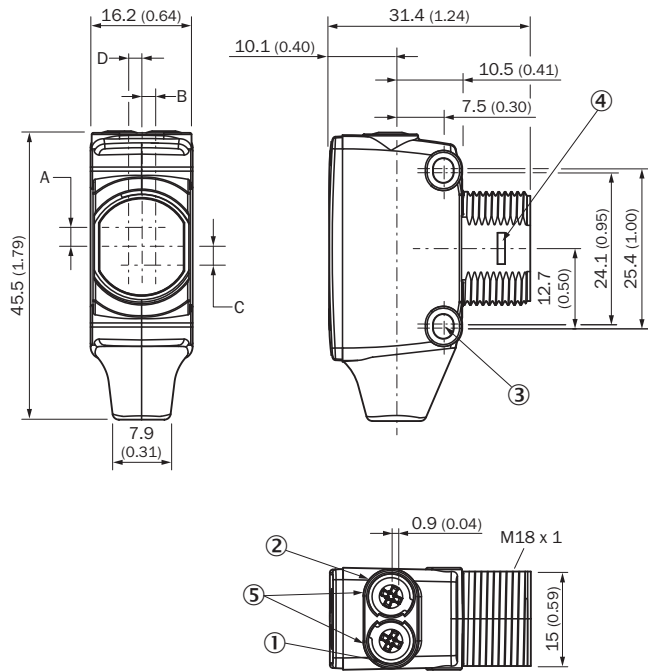
<b>ECLASS 5.0</b>	27270901
<b>ECLASS 5.1.4</b>	27270901
<b>ECLASS 6.0</b>	27270901
<b>ECLASS 6.2</b>	27270901
<b>ECLASS 7.0</b>	27270901
<b>ECLASS 8.0</b>	27270901

<b>ECLASS 8.1</b>	27270901
<b>ECLASS 9.0</b>	27270901
<b>ECLASS 10.0</b>	27270901
<b>ECLASS 11.0</b>	27270901
<b>ECLASS 12.0</b>	27270901
<b>ETIM 5.0</b>	EC002716
<b>ETIM 6.0</b>	EC002716
<b>ETIM 7.0</b>	EC002716
<b>ETIM 8.0</b>	EC002716
<b>UNSPSC 16.0901</b>	39121528

### Connection type/pinouts

<b>Connection type</b>	Cable with M8 male connector, 4-pin, 150 mm
<b>Connection type Detail</b>	
Conductor cross section	0.2 mm <sup>2</sup>
Cable material	PVC
<b>Pinouts<sub>sender</sub></b>	
BN 1	+ (L+)
WH 2	Not connected
BU 3	- (M)
BK 4	Test <sub>IN</sub>
<b>Pinouts<sub>receiver</sub></b>	
BN 1	+ (L+)
WH 2	Q <sub>2</sub>
BU 3	- (M)
BK 4	Q <sub>1</sub>

**Dimensional drawing** (Dimensions in mm (inch))

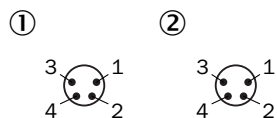


- ① LED indicator yellow: Status of received light beam
- ② LED indicator green: power on
- ③ M3 mounting hole
- ④ Snap Connection for flush ring (sold seperatly)
- ⑤ Potentiometer (if selected) or LED Indicators

Dimensions in mm (inch)	Receiver		Sender	
	A	B	C	D
<b>HTB18 / HTF18</b>	- 1.1 (0.04)	1.1 (0.04)	4.7 (0.19)	0.6 (0.02)
<b>HTE18 / HL18 / HSE18</b>	2.5 (0.1)	0.0 (0.0)	4.0 (0.16)	0.0 (0.0)
<b>HTB18L / HTF18L / HL18L / HSE18L</b>	2.5 (0.1)	0.0 (0.0)	3.5 (0.14)	0.0 (0.0)

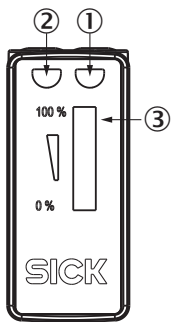
**Connection type**

Pinouts, see Technical details: **Connection type/pinouts**



- ① Sender
- ② Receiver

### Adjustments possible

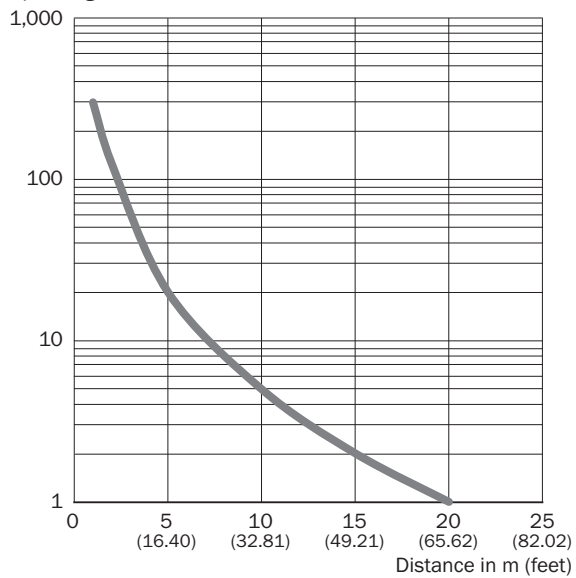


- ① LED indicator yellow: Status of received light beam
- ② LED indicator green: power on
- ③ Signal strength light bar

### Characteristic curve

Infrared light

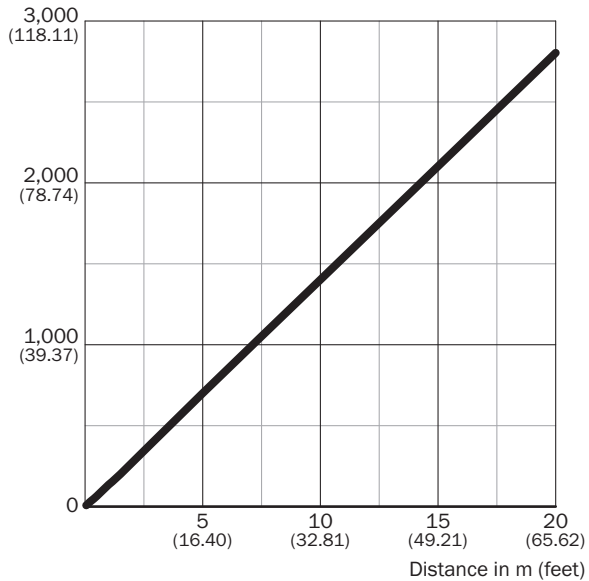
Operating reserve



### Light spot size

Infrared light

mm (inch)

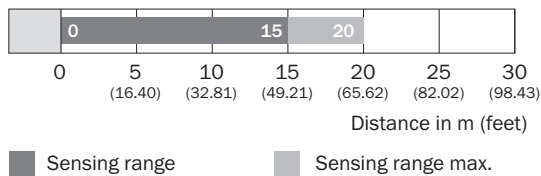


### Dimensions in mm (inch)

Sensing range	Diameter
<b>0.5 m</b> (1.64 feet)	65 (0.21)
<b>1 m</b> (3.28 feet)	135 (5.31)
<b>5 m</b> (16.40 feet)	700 (27.56)
<b>20 m</b> (65.62 feet)	2,800 (110.24)

— Diameter

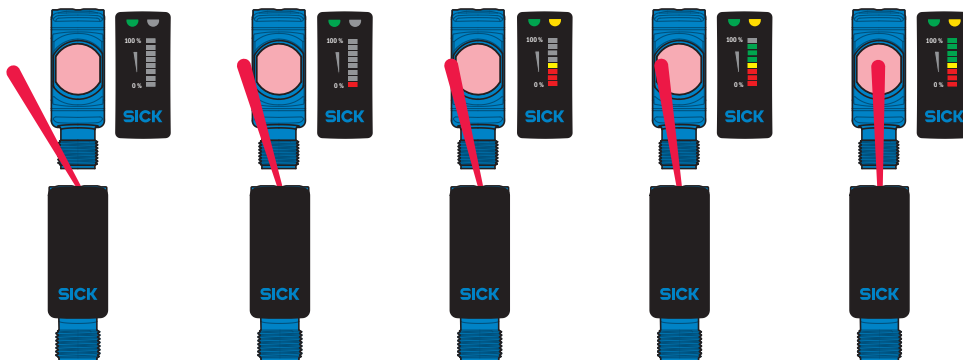
### Sensing range diagram



■ Sensing range



■ Sensing range max.

### Functions



### Recommended accessories

Other models and accessories → [www.sick.com/H18\\_Sure\\_Sense](http://www.sick.com/H18_Sure_Sense)

	Brief description	Type	Part no.
Plug connectors and cables			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M8, 4-pin, straight</li> <li>• <b>Description:</b> Unshielded</li> <li>• <b>Connection systems:</b> Screw-type terminals</li> <li>• <b>Permitted cross-section:</b> 0.14 mm² ... 0.5 mm²</li> </ul>	STE-0804-G	6037323
Others			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M8, 4-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Flying leads</li> <li>• <b>Signal type:</b> Sensor/actuator cable</li> <li>• <b>Cable:</b> 5 m, 4-wire, PVC</li> <li>• <b>Description:</b> Sensor/actuator cable, unshielded</li> <li>• <b>Application:</b> Zones with chemicals</li> </ul>	YF8U14-050VA3XLEAX	2095889



## SICK AT A GLANCE

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We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

## WORLDWIDE PRESENCE:

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